

COMPRESSIBLE FLUID MAGNETORHEOLOGICAL SUSPENSION STRUT

ABSTRACT OF THE DISCLOSURE

A strut (12) is configured for an active suspension system (142) which provides electronic control for both the force applied by the strut (12) and the dampening characteristics of the strut (12). A compressible fluid (18) is used within the strut (12), and preferably includes a compressible base fluid and electromagnetic field responsive particles (132) which are suspended in the compressible base fluid. The electromagnetic field responsive particles (132) are preferably closely matched in density and modulus of elasticity to that of the compressible base fluid to prevent sedimentation of the particles (132) and to maintain the elasticity of the compressible fluid (18). The amount compressible fluid (18) within the strut (12) is electronically controlled to determine the force applied by the strut (12) and a field strength applied to the compressible fluid in a fluid flow passage is electronically controlled to determine the dampening characteristics of the strut (12).